

WHAT IS CLAIMED IS:

1. An image compression coding apparatus comprising:

an image compressor for compressing input image data and to output image compression data constituted by a plurality of subdivided data;

5 an overflow detector for detecting that an output buffer for temporarily storing data generates an overflow or not;

a subdivided data top detector connected to said image compressor and said output buffer, for serving to carry out a normal operation for exactly giving said image compression data to said output buffer and a detecting operation for detecting a top position of said subdivided data from said image compression data to give said image compression data to said output buffer from said subdivided data of which top position is detected; and

10 control means connected such that a result of detection of said overflow detector can be recognized, for serving to cause said subdivided data top detector to execute said detecting operation when an overflow is detected by said overflow detector and to set, as a value of a register indicative of a write destination of said output buffer, an address where a top of said subdivided data a part of which cannot be written to said output buffer is written.

2. The image compression coding apparatus according to claim 1, wherein

20 said subdivided data include a picture to be a processing unit treated by an MPEG,

said subdivided data top detector includes a picture top detector for giving said image compression data, to said output buffer, from a picture of which top position is first detected during said detecting operation.

25 3. The image compression coding apparatus according to claim 1, wherein

said subdivided data include a picture to be a processing unit treated by an MPEG,

5 said subdivided data top detector includes a picture top detector for giving said image compression data, to said output buffer, from a picture of which top position is detected at a predetermined numbered time which is two or more in a first mode, and giving said image compression data, to said output buffer, from a picture of which top position is first detected in a second mode during said detecting operation.

4. The image compression coding apparatus according to claim 3, wherein

10 said control means sets said first mode if a picture type of an overflow picture to be said picture which cannot be written to said output buffer during said overflow is a predetermined type, and sets said second mode if not so.

5. The image compression coding apparatus according to claim 4, wherein

said predetermined type includes a P picture.

6. The image compression coding apparatus according to claim 5, wherein

15 said predetermined type includes an I picture.

7. The image compression coding apparatus according to claim 1, wherein

said subdivided data include a slice to be a processing unit treated by an MPEG which is obtained by further subdividing a picture,

20 said subdivided data top detector includes a slice top detector for detecting a top position of said slice from said image compression data and for giving said image compression data, to said output buffer, from said slice of which top position is detected.

8. The image compression coding apparatus according to claim 1, further comprising:

25 a dummy data inserting section provided between said subdivided data top detector and said output buffer and operated under control of said control means and said

subdivided data top detector,

 said dummy data inserting section serving to insert dummy data in said image compression data in place of said subdivided data which cannot be written to said output buffer during said overflow.

5 9. The image compression coding apparatus according to claim 1, further comprising is a dummy data inserting section for receiving said output image compression data and being operated under control of said control means, wherein

10 said subdivided data top detector includes a subdivided data top detector for inserting a dummy insertion mark in said image compression data during said detecting operation,

 said dummy data inserting section serves to insert dummy data in place of said dummy insertion mark in said output image compression data.

15 10. The image compression coding apparatus according to claim 8, wherein
 said image compressor generates a generation coding quantity to be a bit quantity during compression coding, and

 said control means normally executes rate control for controlling a coding quantity of said image compressor based on said generation coding quantity generated by said image compressor and executes said rate control based on a data volume of said dummy data during an overflow.

20 11. An image compression coding method using an image compression coding apparatus comprising an image compressor for compressing input image data into a subdivided data unit and for outputting image compression data, and an output buffer for temporarily storing said image compression data and for outputting said image compression data as output image compression data in a first – in first – out method while
25 changing a write address, said method comprising the steps of:

(a) returning said write address to an address where said subdivided data which cannot be written to said output buffer during an overflow of said output buffer are to be written when said overflow of said output buffer is generated; and

(b) detecting a top position of said subdivided data from said image compression data without giving said image compression data to said output buffer when said overflow of said output buffer is generated, and giving said image compression data again, to said output buffer, from said subdivided data of which top position is detected.

12. The image compression coding method according to claim 11, wherein
said subdivided data include a picture to be a processing unit treated by an
10 MPEG,

said step (b) includes the step of giving said image compression data, to said output buffer, from a picture of which top position is first detected.

13. The image compression coding method according to claim 11, wherein
said subdivided data include a picture to be a processing unit treated by an
15 MPEG,

said step (b) including the steps of:

(b-1) giving said image compression data, to said output buffer, from a picture of which top position is detected at a predetermined numbered time which is two or more in a first mode, and

20 (b-2) giving said image compression data, to said output buffer, from a picture of which top position is first detected in a second mode.

14. The image compression coding method according to claim 13, further comprising the step of:

(c) setting said first mode if a picture type of an overflow picture to be said
25 picture which cannot be written to said output buffer during said overflow is a

predetermined type, and setting said second mode if not so, said step (c) being executed before said step (b).

15. The image compression coding method according to claim 14, wherein
said predetermined type includes a P picture.

5 16. The image compression coding method according to claim 15, wherein
said predetermined type includes an I picture.

17. The image compression coding method according to claim 11, wherein
said subdivided data include a slice to be a processing unit treated by an MPEG
which is obtained by further subdividing a picture,

10 said step (b) including the step of detecting a top position of said slice from said
image compression data and for giving said image compression data, to said output buffer,
from said slice of which top position is detected.

18. The image compression coding method according to claim 11, further
comprising the step of:

15 (d) inserting dummy data in said image compression data in place of said
subdivided data which cannot be written to said output buffer during said overflow when
said overflow is generated, and giving said image compression data to said output buffer.

19. The image compression coding method according to claim 11, wherein
said step (b) includes the step of inserting a dummy insertion mark in said
20 image compression data,

said method further comprising the step of:

(d) receiving said output image compression data from said output buffer and
inserting dummy data in place of a dummy insertion mark in said output image
compression data.

25 20. The image compression coding method according to claim 18, further

comprising the steps of:

- (e) normally controlling a generation coding quantity to be a bit quantity generated during compression coding in said image compressor, thereby executing rate control; and
- 5 (f) executing said rate control based on a data volume of said dummy data when said overflow is generated.